Australian/New Zealand Standard™

Safety in laboratories

Part 5: Non-ionizing radiations—Electromagnetic, sound and ultrasound

STANDARDS AUSTRALIA

STANDARDS NEW ZEALAND
Paerewa Aotearoa

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee CH-026, Safety in Laboratories. It was approved on behalf of the Council of Standards Australia on 27 November 2003 and on behalf of the Council of Standards New Zealand on 23 February 2004. It was published on 4 March 2004.

The following are represented on Committee CH-026:

Australian Industry Group
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New Zealand Microbiological Society
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Australian Radiation Protection and Nuclear Safety Agency
Queensland University of Technology
Radiation consultants
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Part 5: Non-ionizing radiations—Electromagnetic, sound and ultrasound

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PREFACE

This Standard was prepared by Standards Australia/Standards New Zealand Committee CH-026, Safety in Laboratories, to supersede AS 2243.5—1993, *Safety in laboratories* Part 5: *Non-ionizing radiations*.

The setting of exposure criteria is not conducted by Standards Australia or Standards New Zealand. Such criteria are set by regulations or organizational policy. They may be found in the occupational health and safety or related regulations that are applicable for the workplace under assessment. Where limits are reproduced in this Standard, they are provided as an example for guidance only and the source is indicated. Readers are requested to ascertain the appropriate regulatory body for their circumstances and check with it for the current requirements or recommendations to be applied.

This revision includes the following modifications:

(a) Clarification that field work outside the laboratory and exposures of persons for medical purposes are excluded.

(b) Differentiation between direct and indirect hazards for ultraviolet, visible and laser radiations.

(c) Revised text on the various types of radiation and updated references to Standards and other documents where various types of radiation are addressed in more detail.

(d) Clarification of the source of any limits quoted in this Standard and their status.

This Standard is the fifth in the AS/NZS 2243 series aimed at promoting safety in laboratories. Other Parts of the series are as follows:

Part 1: General
Part 2: Chemical aspects
Part 3: Microbiological aspects and containment facilities
Part 4: Ionizing radiations
Part 6: Mechanical aspects
Part 7: Electrical aspects
Part 8: Fume cupboards
Part 9: Recirculating fume cabinets
Part 10: Storage of chemicals

The term ‘informative’ has been used in this Standard to define the application of the appendices. An ‘informative’ appendix is only for information and guidance.

CONTENTS

Page

FOREWORD 5

SECTION 1 SCOPE AND GENERAL
1.1 SCOPE 6
1.2 OBJECTIVE 6
1.3 REFERENCED DOCUMENTS 6
1.4 DEFINITIONS 8
1.5 GENERAL PRINCIPLES OF PROTECTION 9
1.6 INCIDENT AND ACCIDENT REPORTING 11
1.7 STATUTORY REQUIREMENTS 12

SECTION 2 ULTRAVIOLET RADIATION
2.1 GENERAL 13
2.2 SOURCES OF UV RADIATION 13
2.3 HAZARDS 13
2.4 RECOMMENDED EXPOSURE LIMITS 14
2.5 PROTECTION 15

SECTION 3 VISIBLE LIGHT
3.1 GENERAL 18
3.2 SOURCES OF VISIBLE LIGHT 18
3.3 THE EYE 18
3.4 HAZARDS 18
3.5 RECOMMENDED EXPOSURE LIMITS 19
3.6 PROTECTION 19

SECTION 4 INFRARED RADIATION
4.1 GENERAL 20
4.2 SOURCES OF RADIATION 20
4.3 HAZARDS 20
4.4 RECOMMENDED EXPOSURE LIMITS 20
4.5 PROTECTION 21

SECTION 5 RADIOFREQUENCY RADIATION
5.1 GENERAL 22
5.2 SOURCES OF RADIATION 22
5.3 HAZARDS AND EFFECTS 22
5.4 RECOMMENDED EXPOSURE LIMITS 23
5.5 PROTECTION 23

SECTION 6 EXTREMELY LOW FREQUENCY RADIATION
6.1 GENERAL 24
6.2 SOURCES OF RADIATION 24
6.3 HAZARDS 24
6.4 EXPOSURE LIMITS 25
6.5 PROTECTION 25

Page

SECTION 7 LASERS
7.1 GENERAL 26
7.2 HAZARDS 26
7.3 PERMISSIBLE EXPOSURE LIMITS 27
7.4 PROTECTION 27

SECTION 8 SOUND
8.1 GENERAL 29
8.2 SOURCES OF NOISE 29
8.3 HAZARDS 29
8.4 RECOMMENDED EXPOSURE LEVELS 30
8.5 ACTION TO REDUCE NOISE EXPOSURE LEVELS 30

SECTION 9 ULTRASONIC RADIATION
9.1 GENERAL 32
9.2 SOURCES OF RADIATION 32
9.3 HAZARDS 32
9.4 RECOMMENDED EXPOSURE LEVELS 32
9.5 PROTECTION 32

APPENDICES
A NON-IONIZING ELECTROMAGNETIC SPECTRUM 34
B OPTICAL FIBRE SYSTEMS 35
C RELATED DOCUMENTS 37
D THE USE OF DISTANCE AS A FORM OF PROTECTION 39
E LIST OF ADVISORY AUTHORITIES 40

FOREWORD

Except for acoustic and ultrasonic radiation, the non-ionizing radiations that can be detrimental to human health are electromagnetic (see Appendix A). This Standard outlines precautions needed when working with radiations in the ultraviolet (UV), visible, infrared (IR), radiofrequency (RF) and extremely low frequency field (ELF) portions of the electromagnetic spectrum as well as with acoustic and ultrasonic radiation.

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Australian/New Zealand Standard
Safety in laboratories

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard—

(a) provides information on non-ionizing radiations encountered in laboratories and the associated hazards; and

(b) specifies requirements and gives recommendations in order to prevent injury by these radiations or by other hazards associated with their use.

This Standard does not contain an exhaustive treatment of usage and safety requirements for non-ionizing radiations and reference should be made to other appropriate documents.

NOTES:

1 This Standard does not cover field work performed outside the laboratory or exposure of persons to non-ionizing radiations for medical purposes.

2 This Standard does not cover requirements for medical examinations for laboratory personnel who may be exposed to non-ionizing radiations. Such medical examinations may be designated in codes of practice, other Standards or the requirements of the regulatory authorities.

3 The wavelength band designations given in this Standard are approximate and reflect the conventions used within the referenced literature.

4 Appendix A provides a schematic arrangement of the non-ionizing electromagnetic spectrum.

5 Appendix B provides advisory material dealing with optical fibre systems.

6 Appendix C provides a listing of documents giving other information on non-ionizing radiations.

1.2 OBJECTIVE

The objective of this Standard is to promote safe working practices when using non-ionizing radiations in order to prevent unnecessary exposure of persons working in laboratories containing non-ionizing radiation sources.

1.3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS	
1216	Class labels for dangerous goods
1259	Acoustics—Sound level meters
1259.1	Part 1: Non-integrating
1319	Safety signs for the occupational environment
1633	Acoustics—Glossary of terms and related symbols

AS/NZS 2243.5:2004 Safety in laboratories - Non-ionizing radiations - Electromagnetic, sound and ultrasound